

PVRs

INTRODUCTION

The digital TV switchover has started, and soon we'll all be exclusively watching digital TV. Many of us have already bought set-top boxes to receive the wide range of new channels available, but to make the most of the Freeview service and your television licence fee, you need a digital TV hard disk recorder.

A hard disk recorder receives digital broadcasts like a normal set-top box, but it can also record up to 125 hours of programmes on its internal hard disk. Personal video recorders (PVRs) can even pause live TV, so you'll never miss a moment of your favourite programmes again.

These great features can be had for as little as £100 including VAT, which is a lot less than the cost of a year's TV licence. This month we've reviewed six hard-disk PVRs and three with both hard disks and DVD writers so that you can back up your recordings. Read on to find the perfect way to record the upcoming flood of Christmas TV.

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GET WITH THE PROGRAMME

With so many new channels on digital TV, it's all too easy to miss something you wanted to watch. We test nine hard disk recorders that'll help you keep up

Choosing a... Personal Video Recorder

There are two types of digital TV recorder – or personal video recorder (PVR) – on the market. The most common type stores TV programmes on a built-in hard disk, but you can also buy models that provide both hard disks and DVD recorders. This buying guide will help you choose which type of PVR, and which model, is best for you.

TUNER STAKES

All the hard disk-only PVRs in this month's Labs have twin digital tuners. This makes them ideal for plugging into TV sets that can't receive digital broadcasts. With two tuners you can record one programme while watching another, or even record two at once. Having both tuners in one device also means that you need only one remote control to handle all your TV viewing.

PVRs with both a hard disk and a DVD recorder function more like traditional VCRs. They have only a single digital tuner, so you'll have to use another set-top box, or a television with a built-in digital tuner, if you want to watch one programme while recording another. The combo PVR's main advantage is that you won't need a separate DVD player, and you can archive your TV recordings to DVD if you want to keep them in the long term.

PASS THE PORTS

All the PVRs have RF inputs for connecting an aerial lead. They also have RF passthrough ports, which enable you to pass the aerial signal on to your television or VCR. This passthrough usually carries the original RF signal rather than decoded digital TV, but Topfield's PVR also carries a decoded signal for use with older TVs.

To watch digital programmes you'll need to connect the recorder to your TV with a video cable. All the TV recorders in this Labs test have SCART sockets for this purpose, and you'll get the best picture if you plug them into an RGB-capable SCART socket on your TV. Your TV's manual will tell you which of its sockets are RGB-capable and how to enable RGB mode for each socket.

If your TV has only one SCART socket and it's already connected to a VCR or DVD player, you can simply plug that device into the second SCART socket on the PVR. The PVR will then pass the signal on to the TV when the PVR is in standby mode. PVRs can sometimes use their second SCART socket to output recorded material to a VCR for archiving. See the table on page 105 for details on which kind of SCART socket each PVR has.

If you're connecting a high-definition LCD or plasma TV to a PVR with combined DVD and hard disk, then





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you should use either a component or HDMI output. All the DVD/hard disk combos here will upscale DVD and TV broadcasts to high-definition resolutions. See the individual reviews and the table on page 105 for more details.

PICTURE QUALITY

The picture quality of digital broadcasts varies considerably. Channels are broadcast in small groups called multiplexes, and each of these has a limited bandwidth. Programmes are compressed using MPEG2 compression, and different channels are assigned different amounts of bandwidth. BBC1 generally has consistently high video quality, so we used this channel for our testing.

There is little variation in the picture quality of recorded programmes between different PVRs. All the hard disk-only devices record programmes exactly as they are broadcast. However, the hard disk/DVD combo PVRs have built-in video encoders, so you can reduce video quality to save space on your hard disk or fit more video on a DVD. In our tests we found that leaving the hard disk recorders at their default quality settings gave by far the best results. When we reduced the quality we experienced significant compression artefacts.

Due to the varying amounts of video and audio data in broadcast TV, it's very hard to say exactly how much TV a hard disk will store. As a

guide, you'll get around half the hard disk's total capacity in hours, so a 250GB hard disk will store at least 125 hours of programming. Inexpensive single-layer DVDs hold 4.7GB, so you'll get around two hours on a disc at optimum quality. This means you may have to reduce the quality to fit a long film on a single disc.

PAUSING TV

Another advantage of having a hard disk recorder is the ability to timeshift live TV broadcasts. This enables you to pause the programme you're watching when you want to make a cup of tea or answer the phone. The PVR puts the ongoing broadcast into a buffer, which you can then watch or rewind. On some PVRs this buffering process is constant, and the buffer is refreshed when you change channels, while on others you have to activate timeshifting first. See the reviews for details on how each recorder deals with timeshifting.

ELECTRONIC PROGRAMME GUIDE

The electronic programme guide (EPG) is one of a PVR's most useful features. Rather than fiddling around entering the date, channel, time and duration for each programme you want to record, you simply find the programme on an easy-to-understand timeline and press record. The recorders download these listings automatically from TV broadcasts.

Each electronic programme guide in the group works differently, so we've made detailed notes on each in the individual reviews. We've also noted which EPGs allow you to make simultaneous recordings, how they deal with recording conflicts and whether they enable you to record an entire TV series with a single button press.

VIEWING CARDS

Some of the hard disk recorders have slots for conditional access modules, or CAMs. These modules can accept viewing cards that provide access to subscription services, such as Setanta Sports or Top Up TV Anytime. Although these are currently limited in number, you can expect more to appear over the next few years. A CAM and card for Setanta Sports will cost around £40. The Top Up TV recorder has a built-in CAM and so can accept a card straight away.

DATA FILES AND DV CAPTURE

As well as playing DVDs, the DVD/hard disk combo PVRs have a number of other tricks up their sleeves. They all have analogue video inputs and FireWire ports for capturing footage from camcorders and burning it to DVD. Some devices also have USB ports for accessing media files on removable storage devices or digital cameras. See the individual reviews for more details.



TOP UP TV Anytime DTR



£100 inc VAT
From www.topuptv.com



Top Up TV's Anytime DTR has a viewing card slot on the front, so you can subscribe to Top Up TV's Anytime service, Setanta Sports or both. Anytime records programmes broadcast overnight for you to view when you choose, while Setanta covers a wide range of sports, including live Premiership football.

The unit offers a good selection of ports on the rear. Like all the devices here it has two SCART connectors, the second of which supports both passthrough and output, so you can back up recorded TV to video tape. There's also an S-video output and a coaxial S/PDIF audio output to connect to an AV receiver.

The remote control has the same curvaceous two-tone design as the main unit. It's one of the better remotes in the group, with controls that are easy to understand, and the buttons for the DTR's main functions are thoughtfully grouped together. The remote can also be programmed to control most TVs.

The onscreen menus are well designed. The EPG is limited in size by the Top Up TV Anytime options, and displays only an hour and a half of scheduled programmes over eight channels at a time. Annoyingly, there's no video window showing the current programme while you browse the TV listings.

You can schedule two simultaneous recordings, and selecting a third conflicting programme brings up a warning and shifts you to the scheduling menu to resolve the problem. It also supports series link, so as long as broadcasters have added the necessary information to a programme, the PVR will automatically record every episode in a series.

The Anytime DTR has continuous timeshifting, which starts buffering every time you change channel. You can pause live TV and search through the recorded information at up to 64x speed. Using the two tuners you can timeshift two channels simultaneously and flick back and forth between them. You can also timeshift to the beginning of a scheduled recording while it's still being recorded.

The Anytime DTR's low price, excellent timeshifting and the added flexibility of the viewing card slot make this PVR a great choice. It's our Best Buy.

SUMMARY

- ☒ Cheap; viewing card slot
- ☒ Supports series link
- ☒ No video window in EPG

PVR 160GB hard disk, 2x digital tuners, 2x SCART, S-video, composite, stereo phono, coaxial S/PDIF outputs
PART CODE DTI 6300-16
DETAILS www.topuptv.com



GOODMANS GHD8020F2



£119 inc VAT
From www.marshallward.co.uk

Goodmans' GHD8020F2 is the blandest-looking PVR in the group, but its unobtrusive silver chassis, green LCD and single standby button mean it should blend unnoticed into most living rooms.

The setup wizard asks whether your TV is standard or widescreen and then searches for digital broadcasts, quickly finding all the expected channels. The interface looks basic, with primary colours and a rather chunky font. It reacts quickly to button presses, though, and is easy to understand and navigate.

Channel changes are smooth, and now and next programme information is presented instantly. Alternatively, you can scroll through the now and next information for each channel using the arrow keys and select the channel you want with the OK button. It's a good idea that lets you find out what's on without having to open the EPG.

Although it's basic-looking, the timeline EPG can show two hours of programming for 11 channels at once, which is more than every PVR in the group can manage, apart from the almost identical Evesham PVR. There's no EPG video window, so you can't keep an eye on the current programme while you browse the EPG. You can schedule two recordings at once, and trying to schedule a third recording brings up a window that lets you sort out the conflict. While recording you can also watch previously recorded programmes.

The GHD8020F2's timeshifting mode is less impressive. It doesn't buffer automatically, so you have to press pause to get it started. Even if you are watching a scheduled recording you can't simply rewind to the beginning, as you can access buffered material only after the point at which you first paused. Timeshifting is impossible if you are recording two channels, even if you are trying to timeshift one of the channels you are recording. The search speed is limited to 32x, so it can take a while to scan through a long film to find the part you want to watch.

Its timeshifting mode isn't the most flexible of the PVRs in the group, but Goodmans' GHD8020F2 is still fairly capable. However, Evesham's DTR250 is almost identical, costs just £1 more and has a bigger hard disk.

SUMMARY

- ☒ Well-designed EPG
- ☒ Poor timeshifting
- ☒ Small hard disk; no video window in EPG

PVR 80GB hard disk, 2x digital tuners, 2x SCART, composite, stereo phono outputs
PART CODE GHD8020F2
DETAILS www.goodmans.co.uk



EVESHAM DTR250



£120 inc VAT
From www.evesham.com

Despite looking rather different, Evesham's PVR functions almost identically to Goodmans' GHD8020F2. It may have more controls on the front, but the connections on the rear are exactly the same and, apart from the cover, even the manual is the same.

Like many of the PVRs in the group, the DTR250 has an RF input and passthrough output for each of its two digital tuners. However, an external soldered connection links these, so you have to connect only a single lead to get a signal to both tuners. It's not the prettiest solution, but it's effective and is hidden from view. Along with the remaining RF input, there's a single RF passthrough so you can run the aerial signal into a TV or VCR. The PVR also has two SCART sockets. The first is an output for connecting to your TV, while the second simply acts a passthrough for a DVD or VCR. Composite and phono outputs are also provided.

The DTR250 comes with the same remote control as Goodmans' GHD8020F2. It's incredibly light and the spongy buttons provide little feedback, so it's hard to know if you've actually pressed them. All the most commonly used controls are grouped together at the top, but the channel up and down buttons are arranged horizontally, so you have to press left and right to scroll through the channels, rather than the usual up and down.

Timeshifting programmes and scheduling recordings from the EPG is the same on the DTR250 as on the Goodmans PVR, with all the same problems. Both are capable of picture-in-picture viewing, though, which is handy if you want to keep an eye on the cricket while watching something else.

However, Evesham's DTR250 has one major advantage over the similar GHD8020F2; it has a 250GB hard disk, which can hold at least 125 hours of TV programmes, instead of the Goodmans PVR's small 80GB disk.

With such a big hard disk at a low price the Evesham PVR will appeal to serious telly addicts. But most people would be better off buying Top Up TV's cheaper Anytime DTR, as it has a far better remote control and has useful extras such as series link recording and a viewing card slot.

SUMMARY

- ☒ Well-designed EPG
- ☒ Big hard disk
- ☒ Poor timeshifting; no video window in EPG

PVR 250GB hard disk, 2x digital tuners, 2x SCART, composite, stereo phono outputs
PART CODE DTR250
DETAILS www.evesham.com



HUMAX PVR-9200TB

★★★★★

£163 inc VAT
From www.martindawes.net

Humax's PVR-9200TB is an updated version of the 9200T, which won five stars in *Shopper* 220. The PVR is now black rather than silver, and in some ways resembles a 1980s VCR, but we rather like the simple boxy styling. On the left is a comprehensive range of controls, while a hinged panel on the right opens to reveal a USB port and a CAM card slot.

The USB port serves two useful functions. Once the supplied software is installed on your PC you can transfer recordings from the hard disk to your PC for backing up to DVD or streaming across a network. Alternatively, you can transfer MP3 and JPEG files to the Humax to display on your living room TV.

The supplied remote control is our favourite in the group. It's big and sturdy with large, clearly labelled buttons. The four-way control and other essential buttons are all within easy reach, and less commonly used buttons are neatly hidden behind a sliding cover.

All the onscreen menus are clearly presented and use muted colours that are something of a relief after a few of the more garish menus we've seen. The timeline EPG shows a respectable two hours of programming for five channels at a time, and a window displays the current channel. You can schedule two recordings at once, and even view other channels on the same multiplexes while doing so. The EPG sorts out recording conflicts with a minimum of fuss, and offers series link recording when appropriate.

Timeshifting is well implemented: the Humax automatically buffers whatever channel you are currently watching. Pausing is instantaneous and you can search through the buffered material at up to 64x normal speed. The Humax has the best fast-forward of any of the PVRs here, presenting speeded-up motion rather than a slideshow of stills. Picture quality is also good, and the PVR-9200TB handles heavily compressed broadcasts better than the other PVRs in the group.

With a great remote and interface, plus the ability to archive recordings to your PC, the PVR-9200TB is an excellent PVR. However, Top Up TV's Anytime DTR is almost as capable and costs £63 less, so it just pips the PVR-9200TB to an award.

SUMMARY

- ✓ Well-designed EPG
- ✓ Supports series link; USB port
- ✗ Expensive

PVR 160GB hard disk, 2x digital tuners, 2x SCART, composite, stereo phono, optical S/PDIF outputs
PART CODE PVR-9200TB
DETAILS www.humaxdigital.co.uk



SAGEM DVR64250SL-TUK

★★★★

£170 inc VAT
From www.comet.co.uk

Our first impressions of the Sagem were pretty poor. The design is rather ugly and the orange LCD doesn't help its appeal. The interface continues the theme with ugly-shaped pop-up menus, garish colours and poorly designed icons. The remote control feels light and cheap, although the buttons are clearly labelled and well positioned.

As well as the usual pair of SCART sockets and RF connectors, it has coaxial and optical S/PDIF audio outputs on the rear. More interesting is the USB port on the side of the unit. This lets you plug in USB flash memory devices and access them through an easy-to-use menu. You can view JPEG photos as a slideshow, listening to a playlist of MP3 files as you do so. However, you can't use this port to transfer your TV recordings to a PC as you can with the Humax PVR-9200TB.

The hard disk is a large 250GB model, which can store at least 125 hours of programmes. The EPG, rather than using the usual timeline format, shows a list of upcoming programmes on a single channel at a time. You can schedule dual recordings, but when you try to schedule a third you're simply shown an error message and are not given the option to sort out the conflict. Instead you have to cancel one of the scheduled recordings manually before scheduling the new one.

Timeshifting is automatic, so you can press pause at any time and rewind back through the buffered segment. You can also timeshift during scheduled recordings, even if you're recording two programmes at once. Fast-forward and rewind are jerky, however, and the 4x, 10x, 60x and 300x speeds aren't convenient for finding the part of the programme you want. In addition, entering the EPG will cancel the pause on a timeshifted programme, so you can't pause your favourite show as you browse the schedules. However, there is a video window in the EPG, so you can continue watching while you plan your viewing.

Sagem's DVR64250SL-TUK is a fairly good PVR with a USB port and lots of storage. However, a couple of interface niggles, such as the lack of a timeline EPG, count against it, and for the money you'd be far better off with the Humax PVR-9200TB.

SUMMARY

- ✓ Big hard disk
- ✓ USB port
- ✗ Poor EPG; expensive

PVR 250GB hard disk, 2x digital tuners, 2x SCART, 1x coaxial S/PDIF, 1x optical S/PDIF outputs
PART CODE DVR64250SL-TUK
DETAILS www.sagem.com



TOPFIELD TF5800PVR

★★★★

£250 inc VAT
From www.turbosat.com

At first glance this PVR looked overpriced, but after further investigation we discovered a wide range of features that may interest the serious TV enthusiast.

The bland silver unit has a four-way control on the front, which enables you to navigate the menus without using the remote control. Beside this is a door that hides a pair of slots for CAM modules, so you can watch subscription TV services by adding the appropriate module and viewing card.

The TF5800PVR has an extra RF output, in addition to the usual one for connection to a VCR. It carries the decoded digital signal of the currently selected channel, rather than the original signal coming in from your aerial. This means you can connect a second TV – perhaps in a different room – and watch a Freeview channel on it, even if it has only an RF input.

The interface reacts quickly to button presses on the supplied remote but is a little garish, with some nasty textured backgrounds and bright clashing colours. The EPG is clearly presented, though, and displays three hours of programming on four channels at a time. You can schedule two recordings at once, but there's no series link recording. The PVR has a USB port for archiving recordings to your PC, and you can transfer MP3 files to the PVR's hard disk.

Timeshifting is always active, and you can pause programmes and use the programme guide at the same time. Rewinding through scheduled recordings is also possible, although the rewind and fast-forward have a maximum speed of just 3x. Alternatively you can hold down the search button and skip quickly through the program with the help of the progress bar.

It's worth mentioning that the supplied manual is one of the best we've seen for any device. It's well written, easy to read and does a great job of explaining all the PVR's features. Topfield's PVRs can also be upgraded using Topfield Applications (TAPs), so you can tweak the interface and EPG to suit you. These are created by a group of Topfield users – see www.tappy.org.uk for details. It's expensive, but Topfield's TF5800PVR has some useful features that will appeal to serious TV fans.

SUMMARY

- ✓ Well-designed EPG; USB port
- ✓ Programmable interface
- ✗ Expensive

PVR 160GB hard disk, 2x digital tuners, 2x SCART, S-video, composite, stereo phono, optical S/PDIF outputs
PART CODE TF5800PVR1
DETAILS www.topfield.co.uk



TOSHIBA RD-97DT

★★★★

£212 inc VAT
From www.digitaldirect.co.uk

Toshiba's hard disk/DVD combo PVR is the most stylish here. Like all the hard disk/DVD combo PVRs on test this month, the RD-97DT doesn't have dual tuners. Instead it provides one digital and one analogue tuner, and you can switch between the two. This device is designed to function more like a traditional VCR and be used alongside a TV with a built-in digital tuner.

The programme guide is badly designed, and shows either a list of channels with now and next information for each, or a list of programmes for a single channel. It's fairly sluggish to respond to button presses, and you don't get a video window of the programme you're currently watching. You can use only one tuner at a time, so recording two programmes at once is impossible.

The RD-97DT's timeshifting is poor compared with that of many of the other PVRs. You have to activate it before it will start buffering the broadcast. Only then can you pause the programme and rewind back to the point at which you started buffering. Once you have activated timeshifting, you can rewind to the beginning of a programme you scheduled to record, although you can't access the EPG at all while recording or timeshifting. All recordings can be made either to the 250GB hard disk or to a recordable DVD at one of five different quality settings.

DVD playback is better than that of the other players here, although only by the slightest margin. It produced a slightly crisper image on our test TV. It will upscale any video output to 1080p resolution and you can cycle through all the supported resolutions at the press of a button.

As well as recording and playing back TV and DVDs, the RD-97DT can also record video from a DV camcorder through its FireWire input, or capture video from composite or S-video sources. It can also play back DivX and MP3 files from optical discs, but there's no USB port or memory card reader. Samsung's DVD-SH855M is slightly more expensive, but its USB port and memory card reader give it the edge over the Toshiba PVR.

SUMMARY

- ✓ Big hard disk
- ✗ Poor EPG; single digital tuner
- ✗ Poor timeshifting

HARD DISK/DVD COMBO PVR 250GB hard disk, 1x analogue tuner, 1x digital tuner, HDMI, component, 2x SCART, stereo phono, coaxial S/PDIF, optical S/PDIF outputs
PART CODE RD-97DT
DETAILS www.toshiba.co.uk



SAMSUNG DVD-SH855M

★★★★

£228 inc VAT
From www.lambda-tek.com/components

The Samsung's DVD-SH855M look is spoiled by the bright blue light on the power switch, which clashes with the device's green LCD screen. The fascia's lower panel hides a useful set of basic controls, as well as composite, phono, USB and FireWire inputs.

From its various inputs the DVD-SH855M can capture analogue or DV video either to its hard disk or to a recordable DVD at four different quality settings. The captured video looked good, especially from a DV tape source. You can also copy DivX, MP3 and JPEG files to and from USB sources such as a flash memory drive, DVD and the hard disk. We weren't very impressed with the scaling of JPEG images as the results looked pixellated, but DivX and MP3 playback was fine.

The DVD-SH855M has only a single hybrid tuner, so you can't record two programmes at once. If you want to watch one Freeview broadcast while recording another, you'll need a Freeview-compatible TV or a separate set-top box. The timeline EPG shows two hours of programming for four channels at a time. However, the video preview window changes channels as you browse the EPG, so you can't watch a programme while checking what's on later.

Timeshifting has to be activated manually before you can pause live TV. This is done with a little pop-up menu, although we can't see what's wrong with just using the pause button. You can't start timeshifting in the middle of a scheduled recording and, once it's recording, you can't access the EPG either.

The Samsung PVR has both component and HDMI outputs and can upscale television broadcasts, video and DVD to a resolution of 1080i. Letting the PVR upscale DVDs improved playback quality noticeably on our test TV.

Samsung's DVD-SH855M is incredibly flexible when it comes to capturing video, playing back data files and moving them from one storage format to another. Its EPG and timeshifting functions aren't very well designed, but it's still the best hard disk/DVD combo PVR in the group.

SUMMARY

- ✓ Big hard disk
- ✓ USB port
- ✗ Single digital tuner; poor timeshifting

HARD DISK/DVD COMBO PVR 250GB hard disk, 1x hybrid tuner, HDMI, component, 2x SCART, S-video, composite, stereo phono, coaxial S/PDIF, optical S/PDIF outputs
PART CODE DVD-SH855M
DETAILS www.samsung.com/uk



PANASONIC DMR-EX87

★★★★

£265 inc VAT
From www.digitaldirect.co.uk

Panasonic's DMR-EX87 has a single digital TV tuner, so anyone without digital TV reception should steer well clear. The front panel hides the usual phono and composite inputs, along with S-video and FireWire. There's no USB port, but there is an SD memory card reader on the front of the PVR.

The card reader makes it easy to display your photos directly from an SD card, to back them up to the 250GB hard disk and to archive them to a recordable DVD. You can even record TV directly to the SD card, which is very useful if you have a compatible portable media player. It's not as flexible as a USB port, though, as you can't connect the same range of devices.

As there's only a single tuner you can't record two programmes at once, and you'll need to use your TV's tuner if you want to watch something else while recording. The EPG is easily the best among the hard disk/DVD combo PVRs. It shows two-and-a-half hours of programming over seven channels at a time and is quick and easy to navigate. However, it doesn't help you to resolve recording conflicts, and simply records the programme that starts first.

The DMR-EX87 has two standby modes. The quick start mode lives up to its name but uses 17W while idle. The very efficient Power Save mode is better. It reduces standby power use to only 2W, although it does then take 20 to 30 seconds to return to full operation.

The remote control is well designed, but is rather let down by some annoying control decisions. The timeshifting, for example, has to be activated manually using its own button, and then you have to press play to return to the beginning of the buffer before you can pause or search through the buffered material. You can't access the EPG while timeshifting, either.

Picture quality is better than average for the group, both for DVD playback and TV broadcasts. The player can also upscale TV and DVD to a resolution of 1080p. Despite a decent EPG and good picture quality, Panasonic's PVR just loses out to Samsung's DVD-SH855M PVR, which has its more flexible media handling.

SUMMARY

- ✓ Big hard disk
- ✓ SD memory card reader
- ✗ Single digital tuner; poor timeshifting

HARD DISK/DVD COMBO PVR 250GB hard disk, 1x digital tuner, HDMI, component, 2x SCART, S-video, composite, stereo phono, optical S/PDIF outputs
PART CODE PANA.DMR-EX87EB.BLK
DETAILS www.panasonic.co.uk

PVRs

★ BEST BUY

HARD DISK/DVD
COMBO PVRs

MANUFACTURER	TOP UP TV	GOODMANS	EVESHAM	HUMAX	SAGEM	TOPFIELD	TOSHIBA	SAMSUNG	PANASONIC
Model	Anytime DTR	GHD8020F2	DTR250	PVR-9200TB	DVR64250SL-TUK	TF5800PVR	RD-97DT	DVD-SH855M	DMR-EX87
Rating	★★★★★	★★	★★★★	★★★★★	★★★★	★★★	★★★	★★★★	★★★
FEATURES									
Analogue tuners	0	0	0	0	0	0	1	0	0
Digital tuners	2	2	2	2	2	2	1	0	1
Hybrid tuners	0	0	0	0	0	0	0	1	0
Radio	DVB-T	DVB-T	DVB-T	DVB-T	DVB-T	DVB-T	DVB-T	DVB-T	DVB-T
EPG days	8	8	8	8	8	8	8	8	8
Dual-channel recording	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Series link	Yes	No	No	Yes	No	No	No	No	No
Recording formats	MPEG2	MPEG2	MPEG2	MPEG2	MPEG2	MPEG2	MPEG2	MPEG2	MPEG2
Teletext (analogue/digital)	No/yes	No/yes	No/yes	No/yes	No/yes	No/yes	No/yes	No/yes	No/yes
Viewing card slot	Yes	No	No	Optional upgrade	No	Optional upgrade	No	No	No
Certified Freeview playback	No	Yes	Yes	Yes	No	No	No	No	No
Picture in picture	No	Yes	Yes	Yes	Yes	Yes	No	No	No
Interactive content support	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CONNECTIONS									
Analogue tuner RF inputs	0	0	0	0	0	0	1	0	0
Digital tuner RF inputs	1	1	1	1	1	2	1	0	1
Hybrid tuner RF inputs	0	0	0	0	0	0	0	1	0
RF passthrough sockets	1	1	1	1	1	3	2	1	1
HDMI outputs	0	0	0	0	0	0	1	1	1
Component outputs	0	0	0	0	0	0	1	1	1
Output resolutions	PAL (576i)	PAL (576i)	PAL (576i)	PAL (576i)	PAL (576i)	PAL (576i)	PAL (576i), 720p, 1080i, 1080p	PAL (576i), 720p, 1080i	PAL (576i), 720p, 1080i, 1080p
SCART sockets	1x output, 1x output or passthrough	1x output, 1x passthrough	1x output, 1x passthrough	1x output, 1x output or passthrough	1x output, 1x output or passthrough	1x output, 1x output or passthrough	1x output, 1x input or passthrough	1x output, 1x input or passthrough	1x output, 1x input or passthrough
S-video inputs/outputs	0/1	0/0	0/0	0/0	0/0	0/1	1/0	0/1	1/1
Composite inputs/outputs	0/1	0/1	0/1	0/1	0/0	0/1	1/0	1/1	1/1
Stereo phono inputs/outputs	0/1	0/1	0/1	0/1	0/0	0/1	1/1	1/1	1/1
Coaxial S/PDIF	1	0	0	0	1	0	1	1	0
Optical S/PDIF	0	0	0	1	1	1	0	1	1
Supported surround-sound formats	None	None	None	None	None	None	Dolby Digital, DTS	Dolby Digital, DTS	Dolby Digital, DTS
Other connections	None	Serial	Serial	USB2, serial	None	USB2, serial	FireWire	USB2, FireWire	SD memory card reader, FireWire
STORAGE									
Hard disk size	160GB	80GB	250GB	160GB	250GB	160GB	250GB	250GB	250GB
Optical drive (yes/no)	No	No	No	No	No	No	Yes	Yes	Yes
Region free	N/A	N/A	N/A	N/A	N/A	N/A	No	No	No
Supported disc formats	N/A	N/A	N/A	N/A	N/A	N/A	DVD+R, DVD-R, DVD+RW, DVD-RW, DVD+R DL, DVD-R DL, DVD-RAM	DVD+R, DVD-R, DVD+RW, DVD-RW, DVD+R DL, DVD-R DL, DVD-RAM	DVD+R, DVD-R, DVD+RW, DVD-RW, DVD+R DL, DVD-R DL, DVD-RAM
Audio playback formats	None	None	None	MP3	None	MP3	MP3	MP3	MP3
Video playback formats	None	None	None	None	None	None	MPEG2, DivX	MPEG2, DivX	MPEG2, DivX
Image viewing formats	None	None	None	JPEG	None	JPEG with download	JPEG	JPEG	JPEG
GENERAL									
Power consumption (on/standby)	24W/not disclosed	21W/11.7W	21W/11.7W	28W/11W	18W/9.5W	25W/8W	37W/7W	31W/5W	36W/2W
Accessories provided	SCART cable, RF cable, remote control	SCART cable, RF cable, remote control	SCART cable, RF cable, remote control	SCART cable, remote control	SCART cable, remote control	SCART cable, 2x RF cables, remote control	RF cable, remote control	RF cable, remote control, AV cable	Remote control, AV cable
Dimensions (WxDxH)	368x221x62mm	360x280x48mm	360x280x48mm	380x281x78mm	315x230x45mm	340x265x60mm	420x290x59mm	430x336x59mm	430x330x59mm
BUYING INFORMATION									
Price including VAT	£100	£119	£120	£163	£170	£250	£212	£228	£265
Warranty	One year RTB	One year RTB	One year RTB	Two years RTB	One year RTB	One year RTB	One year RTB	One year RTB	One year RTB
Supplier	Top Up TV 08700 543210	www.marshallward.co.uk	www.evesham.com	www.martindawes.net	www.comet.co.uk	www.turbosat.com	www.digitaldirect.co.uk	www.lambdatek.com/componentshop	www.digitaldirect.co.uk
Details	www.topuptv.com	www.goodmans.co.uk	www.evesham.com	www.humaxdigital.co.uk	www.sagem.com	www.topfield.co.uk	www.toshiba.co.uk	www.samsung.com/uk	www.panasonic.co.uk
Part code	DTI 6300-16	GHD8020F2	DTR250	PVR-9200TB	DVR64250SL-TUK	TF5800PVR1	RD-97DT	DVD-SH855M	PANA.DMR-EX87EB.BLK

Labs verdict PVRs

Having recorded and watched endless hours of daytime TV, we felt fully qualified to choose the best PVR. In the end there were two models that deserved special mention, and one undisputed winner.

Samsung's DVD-SH855M is the best of a rather disappointing trio of hard disk/DVD combo PVRs. Although all these devices have an amazing range of features, none of them gets the basics right, so we didn't think any of them deserved an award.

Among the hard disk PVRs, Humax's PVR-9200TB almost took the group's top honours. Its interface is excellent, with timeshifting and scheduling that work exactly as you'd expect them to. It also has a USB port for archiving recordings, but is fairly expensive at £163.

While impressive, Humax's PVR couldn't beat Top Up TV's Anytime DTR. It does everything you need a PVR to do and has the added flexibility of a viewing card slot.



It's available for only £100 including VAT, and there's no commitment to subscribe to the Anytime service. It's a bargain and our Best Buy PVR. **CE**